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CC:
Subject: The New Yorker: Burning Love

The New Yorker: BURNING LOVE

By: Elizabeth Kolbert
12/5/11

Americans have never met a hydrocarbon they didn't like. Oil, natural gas, liquefied natural gas, tar-sands oil, coal-bed methane, and coal, which is, mostly, carbon—the country loves them all, not wisely, but too well. To the extent that the United States has an energy policy, it is perhaps best summed up as: if you've got it, burn it.

America's latest hydrocarbon crush is shale gas. Shale gas has been around for a long time—the Marcellus Shale, which underlies much of Pennsylvania and western New York, dates back to the mid-Devonian period, almost four hundred million years ago—and geologists have been aware of its potential as a fuel source for many decades. But it wasn't until recently that, owing to advances in drilling technology, extracting the gas became a lucrative proposition. The result has been what National Geographic has called “the great shale gas rush.” In the past ten months alone, some sixteen hundred new wells have been drilled in Pennsylvania; it is projected that the total number in the state could eventually grow to more than a hundred thousand. Nationally, shale-gas production has increased by a factor of twelve in the past ten years.

Like many rushes before it, the shale-gas version has made some people wealthy and others miserable. Landowners in shale-rich areas have received thousands of dollars an acre in up-front payments for the right to drill under their property, with the promise of thousands more to come in royalties. A new term has been invented to describe them: “shaleionaires.”

Meanwhile, some of their neighbors—who are, perhaps, also shaleionaires—have watched their tap water turn brown and, on occasion, explode. Shale gas is embedded in dense rock, so drillers use a mixture of water, sand, and chemicals to open up fissures in the stone through which it can escape. (This is the process known as “hydraulic fracturing,” or, more colloquially, “fracking.”) In the 2005 energy bill, largely crafted by Vice-President Dick Cheney, fracking was explicitly exempted from federal review under the Safe Drinking Water Act. As a result of this dispensation, which has been dubbed the Halliburton Loophole, drilling companies are under no obligation to make public which chemicals they use. Likely candidates include such recognized or suspected carcinogens as benzene and formaldehyde.

Shale gas is found deep underground; most of the Marcellus Shale sits a mile or more beneath the surface, far below the level of groundwater. Industry officials argue that the depth of the formations makes it impossible for fracking to pollute drinking-water supplies. “There have been over a million wells hydraulically fractured in the history of the industry, and there is not one—not one—reported case of a freshwater aquifer having ever been contaminated,” Rex Tillerson, the chairman and C.E.O. of ExxonMobil, declared at a congressional hearing last year.

Nevertheless, as the Times recently reported, contamination with fracking fluid has occurred. (Details of contamination cases are difficult to get, because most of the records have been sealed in litigation.) And, just a few weeks ago, the Environmental Protection Agency reported that drinking water in Pavillion, Wyoming, contained a chemical that is commonly found in fracking fluid, although the agency has not yet determined whether fracking was the source. The E.P.A. is also investigating several cases of suspected contamination in the town of Dimock, Pennsylvania.

Shale gas itself presents another potential problem. A recent study by researchers at Duke University showed that methane frequently leaks into drinking water near active fracking sites, which probably explains why some homeowners have been able to set their tap water on fire. Yet another possible source of contamination is so-called “flowback” water. Huge quantities of water are used in fracking, and as much as forty per cent of it can come back up out of the gas wells, bringing with it corrosive salts, volatile organic compounds, and radioactive elements, such as radium. Citing public-health concerns, Pennsylvania recently asked drillers to stop taking flowback water to municipal treatment plants.

New York State currently has a moratorium on fracking permits, pending the adoption of new regulations. Anxiety about New York City's drinking-water supply has prompted the state's Department of Environmental Conservation to recommend, in a set of draft rules, that the practice be prohibited in the city's upstate watershed. (The department is

holding a hearing on the proposed regulations this week in Manhattan; a similar hearing, held earlier this month in Binghamton, drew nearly two thousand people.) There is also a moratorium on fracking in the Delaware River Basin, which spans parts of New York, New Jersey, Delaware, and Pennsylvania and is the source of drinking water for fifteen million people. The Delaware River Basin Commission, the body charged with protecting water quality in the region, was expected to lift that moratorium last week; however, the decision was put off after Delaware's governor, Jack Markell, a commission member, announced that he would vote against the move. "Once hydrofracturing begins in the basin, the proverbial 'faucet' cannot be turned off, with any damage to our freshwater supplies likely requiring generations of effort to clean up," Markell wrote in a letter explaining his decision.

Every kind of energy extraction, of course, poses risks. Mountaintop-removal mining, as the name suggests, involves "removing" entire mountaintops, usually with explosives, to get at a layer of coal. Coal plants, meanwhile, produce almost twice the volume of greenhouse gases as natural-gas plants per unit of energy generated. In the end, the best case to be made for fracking is that much of what is already being done is probably even worse.

The trouble with this sort of argument is that, in the absence of a rational energy policy, there's no reason to substitute shale gas for coal. We can combust them both! The way things now stand, there's nothing to prevent us from getting wasted mountains and polluted drinking water, and a ruined climate to boot.

In the coming decades, ever-improving technologies will almost certainly make new sources of hydrocarbons accessible. At some point, either we will outgrow our infatuation or we will burn our way to a very dark place. ♦

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